SECTION 23 3123
UNDERGROUND DUCTS

PART 1 - GENERAL

1.1 SUMMARY
A. Includes But Not Limited To:
   1. Furnish and install underground ducts as described in Contract Documents.

B. Related Sections:
   1. Section 23 3001: Common Duct Requirements.

1.2 REFERENCES
A. American Society For Testing And Materials:
   1. ASTM A 653-02a, 'Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.'

1.3 QUALITY ASSURANCE
A. Pre-Installation Conference: Participate in conference specified in Section 03 3111.

PART 2 - PRODUCTS

2.1 COMPONENTS
A. Ductwork:
   1. Fiberglass-reinforced plastic duct system.
      a. Category Four Approved Manufacturer. See Section 01 6000 for definitions of Categories.
   2. PVS or PVC coated galvanized steel duct with 4 mil thick coating on outside and on inside.
      a. Duct shall have and bear mark of approval of building code in authority for this Project.
      b. Gauges shall be as follows and be marked on each duct section. Corrugate ducts 14 inches 350 mm in diameter and larger.
         1) Duct Size  Gauge
            a) 4 to 8 inches  26
            b) 9 to 12 inches  24
            c) 14 to 22 inches  22
            d) 24 to 28 inches  20
            e) 30 to 40 inches  18
         2) Duct Size  Thickness
            a) 100 to 200 mm  0.48 mm
            b) 225 to 300 mm  0.635 mm
            c) 350 to 550 mm  0.79 mm
            d) 600 to 700 mm  0.95 mm
            e) 750 to 1 000 mm  1.27 mm
B. Accessories:
   1. Joint Sleeves: Galvanized sheet metal, galvanizing meeting requirements of ASTM A 527, G 60.
      a. Duct Size   Gauge   Width
         1) 4 to 12 inches  26   4 inches
         2) 14 to 24 inches  24   4 inches
         3) 26 to 36 inches  22   6 inches
      b. Duct Size   Thickness   Width
         1) 100 to 300 mm  0.48 mm   100 mm
         2) 350 to 600 mm  0.635 mm  100 mm
         3) 650 to 900 mm  0.79 mm   150 mm
   2. Metal Boots: 20 ga 0.95 mm galvanized steel, galvanizing meeting requirements of ASTM A527, G 60.
   3. Connection Tape:
      a. Category Four Approved Products. See Section 01 6000 for definitions of Categories.
         1) Spunstrand: Sealtite PS401 sealing tape by Spunstrand Inc.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Spunstrand:
   1. Join duct sections with galvanized sheet metal sleeve inside of duct secured with sheet metal screws.
   2. Wipe joint area clean and apply one layer of tape. Tape shall cover all screw heads.
   3. Construct sheet metal boot with 1-1/2 inch 38 mm flange to fit against duct. Attach boot with self-tapping sheet metal screws, pulling boot flange snug to duct surface and tape joints. Tape shall cover screw heads.
   4. Encase boot completely in concrete, covering well around and below taped joint.

B. Coated Steel Duct
   1. Install 6 mil polyethylene vapor barrier around duct.
   2. Fittings shall be PVS or PVC.
   3. Join duct sections, fittings, and boots with sheet metal screws as detailed on Drawings.
   4. Wrap duct connections, including boot connections to ducts, with two layers of specified tape installed in accordance with Manufacturer’s recommendations. Cover screw heads with tape.
   5. Encase boot completely in concrete, covering well around and below taped joint.
   6. Where PVS or PVC coating has been scratched, scuffed, or peeled during shipping or installation, cover exposed metal with coating compound recommended by Manufacturer and in accordance with his recommendations.

END OF SECTION